

PHILIPS RADIOPLAYER

MODEL 203

SPECIFICATIONS

(Subject to alteration without notice)

Power Supply	200/250V, 40/50 c/s
Tuning Ranges	530-1620 Kc/s
	4.7-9.2 Mc/s
	9.1-18.4 Mc/s
Intermediate Frequency	455 Kc/s
Cabinet	Radiogram
Record Changer	Philips type AG1014
Pick-up Head	Philips type AG3016
Pick-up Head	Philips type AG3025



VALVE EQUIPMENT AND VOLTAGE ANALYSIS

Valve Function	Valve No.	Valve Type	Plate Volts	Screen Volts	Osc. P. Volts	Bias Volts
Frequency Converter	V1	6AN7	236	55	56	
I.F. Amplifier, Demodulator and A.V.C.	V2	6N8	236	55		
1st Audio Amplifier	V3	6BD7	66			
Phase Splitter	V4	6BD7	110			
Push-Pull Power Amplifier	V5	6M5	265	236		35
Push-Pull Power Amplifier	V6	6M5	265	236		8.4*
Rectifier	V7	6V4	260/260 AC		Unfiltered B+, 272V DC	
Dial Lamps (2), Bezel Lamp	V11, 12, 13	6.3V, 0.32A tubular screw			Filtered B+, 236V DC	
					Heater Volts 6.35V AC	
. Volts across R26, 9.2V			*Measured with V.T.V.M.			

NOTE: Unless otherwise stated, all voltages are 1,000 ohms per volt meter readings and may vary $\pm 10\%$ from the figure quoted. They are measured from the socket points indicated to chassis or across the resistors listed. The receiver should be in a "no signal" condition.

TO REMOVE CHASSIS FROM CABINET

Withdraw the power plug from the mains outlet socket. Remove the four receiver control knobs (a firm pull is all that is necessary) and cabinet back panel. Unscrew the aerial and earth terminal strip, disconnect the internal aerial and unclip the aerial and earth leads from the cabinet.

Remove the pick-up, speaker and bezel lamp plugs from their respective chassis sockets together with the record changer unit, power plug. Extract the two wood screws at either side extreme top edge of dial back plate and the two 5/32" Whit. metal thread screws securing chassis side flanges. The chassis, complete with push-button unit, dial scale, etc., may now be withdrawn from the cabinet.

Procedure for chassis replacement is a reversal of the foregoing.

MAINS VOLTAGE ADJUSTMENT

The power transformer primary winding is provided with two mains voltage tapings—200/230 volts and 240/250 volts—for adjustment to the supply voltage at the point of installation. The receiver is factory adjusted to the 240/250 volts tapping.

DIAL CALIBRATION

In the event of an equal calibration error over the entire dial scale, the dial cursor can easily be moved on the dial drive cord to correct the error.

ALIGNMENT

Check that the position of pointer is over the stop mark on the dial scale when tuning gang is fully closed. Adjust if necessary as described in the foregoing.

For I.F.T. and R.F. trimmer locations refer to the circuit diagram inset drawing.

The "Radio" and "Speech" push buttons must remain in the depressed position and the volume control be set to maximum (fully clockwise) throughout alignment procedure.

I.F. Alignment

Screw out iron core of 2nd I.F.T. primary.

Apply modulated 455 Kc/s signal via a 100 pF capacitor to control grid (pin 2) of V1 and peak I.F.T. cores in the following sequence:—

- Secondary 2nd I.F.T. (L11)
- Secondary 1st I.F.T. (L10)
- Primary 1st I.F.T. (L9)
- Primary 2nd I.F.T. (L12)

Do not repeat any adjustments.

PARTS LIST

CAPACITORS

No.	Description	Code No.
C1, 13, 17, 24, 33, 45	100 pF mica	
C2	0.047 μ F 200V paper	
C3, 5, 6, 14, 15	30 pF air trimmer	CZ.113.700
C4, 16	180 pF \pm 1% mica	CZ.085.722
C7	115 pF \pm 2% mica	CZ.066.138
C8	0.0045 pF \pm 10% mica	
C9	475 pF \pm 2% mica	CZ.066.119
C10, 11	2 gang tuning	CZ.107.759
C12	10 pF pair trimmer	
C18	110 pF \pm 2% mica	
C19, 25	195 pF \pm 2% ceramic	
C20, 26	110 pF \pm 2% ceramic	
C21	0.01 μ F mica	
C22	0.01 μ F 400V paper	
C23	470 pF \pm 10% mica	
C27	0.001 μ F 400V paper	
C28	0.033 μ F 400V paper	
C29, 32, 46	0.0033 μ F 400V paper	
C30	0.022 μ F 200V paper	
C31	0.01 μ F 400V paper	
C34, 35	0.0022 μ F 400V paper	
C36, 37	0.01 μ F 600V paper	
C38, 39	40 μ F 300V electrolytic	
C40	25 μ F 25V electrolytic	
C41	0.001 μ F 600V paper	
C42	0.0047 μ F 600V paper	
C43	100 μ F 6V non-polarised electrolytic (Part of record changer)	CZ.099.873.D
C44	0.27 μ F 400V paper	

All tolerances are \pm 20% unless otherwise specified.

B/C Alignment

Use a standard R.M.A. dummy aerial and apply a modulated R.F. signal to the aerial terminal.

Alignment frequencies are: 1.420 Kc/s, 3XY (peak oscillator (C12) and aerial (C3) trimmers), and 600 Kc/s, 72L (peak oscillator slug (L7, 8) whilst rocking gang).

S/W Alignment

Alignment of the S/W 2 band (wave change switch in central position) should be completed before commencement of S/W 1 alignment.

RESISTORS

No.	Description	Code No.
R1	100 ohms $\frac{1}{2}$ W W/W	CZ.008.419
R2	22,000 ohms $\frac{1}{2}$ W	
R3	56,000 ohms \pm 10% 1W	
R4	1 megohm 1W	
R5	68,000 ohms \pm 10% 1W	
R6, 24	220,000 ohms \pm 10% 1W	
R7, 9	47,000 ohms $\frac{1}{2}$ W	
R8, 25	56,000 ohms \pm 10% $\frac{1}{2}$ W	
R10	1 megohm $\frac{1}{2}$ W	
R11	0.5 megohm potentiometer taper "C", tapped at 40,000 ohms	CZ.029.152
R12, 33, 34	10,000 ohms $\frac{1}{2}$ W	
R13, 19	68,000 ohms \pm 10% $\frac{1}{2}$ W	
R14	10 megohms $\frac{1}{2}$ W	
R15	220,000 ohms $\frac{1}{2}$ W	
R16	100,000 ohms $\frac{1}{2}$ W	
R17	180,000 ohms \pm 10% $\frac{1}{2}$ W	
R18	0.5 megohm potentiometer taper "A", tapped at 250,000 ohms	CZ.029.153
R20	10 megohms $\frac{1}{2}$ W	
R23	10,000 ohms \pm 10% $\frac{1}{2}$ W	
R26	150 ohms \pm 10% 1W W/W	
R27, 28	680,000 ohms \pm 10% $\frac{1}{2}$ W	
R29, 30	4,700 ohms $\frac{1}{2}$ W	
R31, 32	4,700 \pm 10% 1W	

All tolerances are \pm 20% unless otherwise specified.

Since the receiver oscillator frequency is above that of the signal, selection of the higher of the two frequencies tunable on the receiver is the correct alignment procedure.

S/W 2 (4.7 to 9.2 Mc/s) band: Alignment frequencies are 4.825 Mc/s (white triangle—peak oscillator (L5, 6) slug), and 8.9 Mc/s (white triangle—peak oscillator trimmer C15 and aerial trimmer C6 whilst rocking gang). If the oscillator slug can be peaked in two positions a core setting nearest to coil connection lug is the correct setting. The minimum capacitance (furthest out) position of oscillator trimmer C15 is

COILS

No.	Ohms	Description	Type or Code No.
L1	1.2-1.7	S/W aerial coil	CZ.323.027
L2	<0.5	B/C aerial coil	CZ.323.026
L3	19.6-26.4	S/W oscillator coil	CZ.330.614
L4	1.5-2.0	1st I.F. transformer	A3.126.84
L5	<0.5	2nd I.F. transformer	CZ.320.444
L6	<0.5	Power transformer	CZ.344.107
L7	150/158	Output transformer	Rola KOL53, CZ.345.043
L8	<0.5	Loudspeaker	Rola 8M, F62
L9	<0.5	Choke, dividing network	Rola 5FX, F95
L10	8.0-9.0	Power transformer	Rola CH17
L11	4.7-5.2	Power transformer	
L12	8.3-9.2	Power transformer	
L13	26-36	Power transformer	
L14	315-425	Power transformer	
L15	<0.5	Power transformer	
L16	150/158	Output transformer	
L17	<0.5	Loudspeaker	
L18	<0.5	Loudspeaker	
L19	<0.5	Choke, dividing network	
L20	<0.5	Choke, dividing network	

IMPORTANT! When ordering spare parts, quote **CODE NUMBER** of part and **MODEL NUMBER** of Receiver. In claiming free replacement under **GUARANTEE**, return defective part **PROMPTLY** and quote **MODEL** and **SERIAL NUMBER** of Receiver and **DATE OF PURCHASE**.

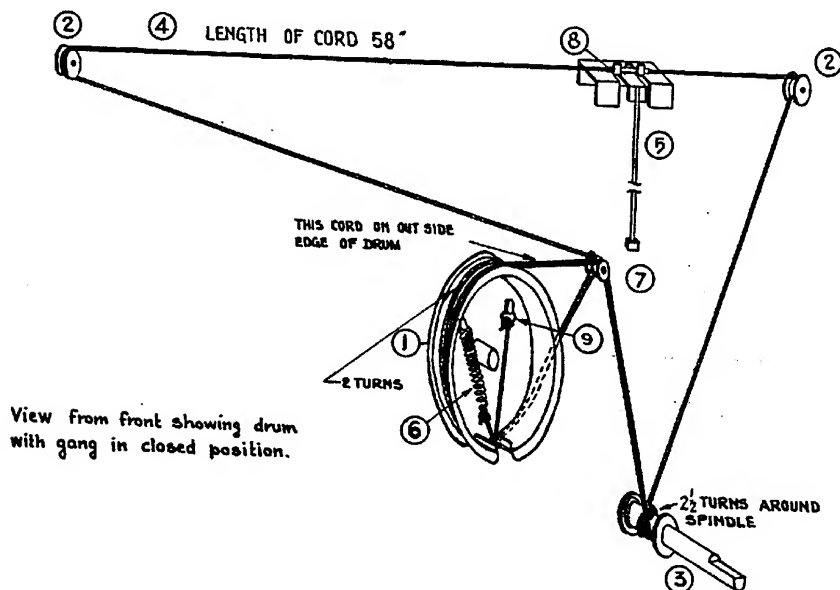
similarly the true peak setting of two possible peaks obtainable.

S/W 1 (9.1 to 18.4 Mc/s—W/C switch fully clockwise) band: Alignment frequencies are 17.8 Mc/s (green triangle—peak oscillator trimmer C14 and aerial trimmer C5 whilst rocking gang), and 9.65 Mc/s (green triangle—check calibration). The minimum capacitance setting of oscillator trimmer C14 is the correct peak setting of two peaks obtainable, i.e., an image response is tunable at 16.9 Mc/s.

Do not attempt adjustment of the slugs in aerial coils L1, 2, and L3, 4.

MISCELLANEOUS COMPONENTS

Drawing Reference No.	Description	Type or Code No.	Drawing Reference No.	Description	Type or Code No.
5	Assembly, cursor	CR.480.668	—	Plug, chassis, power	CZ.365.115
3	Assembly, tuning spindle	CR.371.334	—	Plug, 2 pin polarised, x3	C/F 691-5-1
—	Assembly, lamp holder, x2	C/F 733-5-4	—	Scale, dial	CS.412.416
—	Badge	CR.531.408	—	Socket, chassis, power	CZ.365.116
—	Bezel, indicator	CS.430.046	—	Socket, 2 pin polarised, x3	C/F 733-16-1
—	Bracket assy., pulley	CR.265.223	8	Spring, cursor	CS.212.016
—	Channel, dial mtg. rubber, x2	CS.424.194	6	Spring, dial cord	CS.210.035
—	Clamp, dial, x2	CS.233.570	—	Spring, I.F.T. retaining	A3.652.58
4	Cord, dial drive	58" required	—	Strip, A & E terminal	C/F 679-2-5
1	Drum, dial	CS.360.015	—	Support, brkt., dial, L.H.	CR.248.458
—	Ferrule, cabinet leg, x4	CS.420.216	—	Support, brkt., dial, R.H.	CR.248.459
—	Holder, pick-up head	P4.380.35	—	Support, press button switch, L.H.	CS.232.643
—	Knob, control, x4	CR.523.753	—	Support, press button switch, R.H.	CS.232.642
—	Name "Philips"	A3.308.24	—	Switch, push button (complete)	A3.790.47
—	Name "High Fidelity"	CS.436.451	—	Switch, wave change	CZ.201.211



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